

Attorney Docket No. P11036-US1
Customer Number 27045

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims

1 -10. (Canceled)

11. (New) A method of suppressing small frequency bands in fading areas of data transmitted utilizing multiple carriers, wherein the data to be transmitted is divided into blocks and modulated by a Inverse Discrete Fourier Transformation (IDFT) within the transmitter and demodulated in a receiver by a Discrete Fourier Transformation (DFT), said method comprising:

- dividing a predetermined broad frequency band into a multitude of subchannels with sub-carriers assigned to the subchannels;

- detecting for each subchannel in the spectrum, a main lobe and several minor lobes occurring in an area of near sub-carriers due to the modulation and demodulation by the IDFT and DFT, respectively;

- utilizing as compensating tones, at least part of the sub-carriers included in at least one fading area sector and/or sub-carrier bordering on the fading area sector, wherein the compensating tones show a similar frequency spectrum as the minor lobes occurring in the fading area of sub-carriers existing outside the fading area sector; and

- suppressing the minor lobes occurring in the fading area of the sub-carriers existing outside the fading area sector, said suppressing step including:

- modulating the compensating tones in accordance with data values of the minor lobes occurring in the fading area of the sub-carriers existing outside the fading area sector, wherein the modulating step includes calculating modulation parameters for the compensating tones to ensure that an integral of a weighted transmitted power density spectrum is minimized over the entire frequency range; and

- transmitting the modulated compensating tones with the data.

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12. (New) The method of claim 11, wherein the step of calculating modulation parameters includes calculating the modulation parameters based on current data to be transmitted and data already transmitted.

13. (New) The method of claim 11, further comprising transmitting a guard interval between each data block.

14. (New) The method of claim 11, further comprising transmitting a cyclic prefix between each data block.

15. (New) A method of suppressing small frequency bands in fading areas of data transmitted utilizing multiple carriers, wherein the data to be transmitted is divided into blocks and modulated by a Inverse Discrete Fourier Transformation (IDFT) within the transmitter and demodulated in a receiver by a Discrete Fourier Transformation (DFT), said method comprising:

dividing a predetermined broad frequency band into a multitude of subchannels with sub-carriers assigned to the subchannels;

detecting for each subchannel in the spectrum, a main lobe and several minor lobes occurring in an area of near sub-carriers due to the modulation and demodulation by the IDFT and DFT, respectively;

utilizing as compensating tones, at least one part of the sub-carriers included in at least one fading area sector and/or sub-carrier bordering on the fading area sector, wherein the compensating tones show a similar frequency spectrum as the minor lobes occurring in the fading area of sub-carriers existing outside the fading area sector; and

suppressing the minor lobes occurring in the fading area of the sub-carriers existing outside the fading area sector, said suppressing step including:

modulating the compensating tones in accordance with data values of the minor lobes occurring in the fading area of the sub-carriers existing outside the fading area sector, wherein the modulating step includes calculating modulation parameters to ensure that an integral is minimized over the entire frequency range of the weighted,

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squared value of the Fourier transformation of the transmitted data signal over a predefined number of data blocks; and

transmitting the modulated compensating tones with the data.

16. (New) The method of claim 15, wherein the step of calculating modulation parameters includes calculating the modulation parameters based on current data to be transmitted and data already transmitted.

17. (New) The method of claim 15, further comprising transmitting a guard interval between each data block.

18. (New) The method of claim 5, further comprising transmitting a cyclic prefix between each data block.